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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,698	07/19/2001	Parviz Tayebati	CORE-3 CON 3	2823

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EXAMINER

SCOTT JR, LEON

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 07/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/910,698

Applicant(s)

TAYEBATI, PARVIZ

Examiner

Leon Scott, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

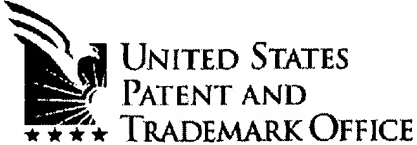
Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear in line 1 of claim 1 how the external cavity waveguide is *adapted for tuning*, claim 1 is indefinite and incomplete. Since it is not clear that any means can create a waveguide as recited in line 5, claim 1 is indefinite and incomplete. In claim 1 given the structure of the claim, it is not clear what structure constitutes the tunable *external cavity and waveguide* or what structure makes the undefined and unclaimed *external cavity waveguide* tunable; claim 1 is indefinite and incomplete. In line 2 of claim 11 it is not clear that inducing a compressive strain field in a substrate will created a waveguide in said substrate; claim 11 is indefinite and incomplete. Further use of the words: creates in line 4 of claim 11; *created* in line 2 of claim 12 and in line 6 of claim 16; and *create* in lines 2 and 7 of claim 20 render claims 11, 12, 16, 20 and all claims which depend therefrom indefinite and incomplete. It is not clear in lines 1-3 of claim 11 what the structure is that *induces* a compressive strain field in said substrate; claim 11 is indefinite and incomplete. Further in lines 4 and 5 of claim 11 it is not clear how the graduated variations in the index of refraction are created by the compressive-strain field; claim 11 is indefinite and incomplete. The recitations: *depositing* in line 2 of claim 12; *said layer of material applied to said substrate ... and the allowed to cool* in lines 6 and 7 of claim 12; *said layer of material is deposited onto...and further wherein a channel is formed* in lines 2-4 of claim 13; *said layer of material is deposited onto* in lines 3 and 4 of claim 14; *wherein a layer of material is deposited onto* in lines 3 and 5 of claim 15 and in line 3 of claim 16; *a waveguide formed in said substrate and.. distributed Bragg reflector (DBR) formed* in lines 5-7 of claim 19 are method limitations, thus it is not clear what applicant is relying upon to carry the claim method or apparatus; claims 12-16 and 19 are indefinite and incomplete. The recitation *cooperatively disposed* in line 1 of claim 19 and in line 9 of claim 20 is indefinite. It is not clear in lines 8-12 of claim 19 how a portion of the emitted laser light is directed back into said semiconductor laser as a function of a pre-determined external voltage difference that is

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selectively applied.. ; claim 19 is indefinite and incomplete. In line 2 of claim 20 an *active section* of what; and how is it *adapted to create light*; claim 20 is indefinite and incomplete. Lines 2 and 3 of claim 20 further express desired results while failing to recite the structure and or means necessary to provide those results; for example since nothing is optically pumped how is spontaneous emission achieved; over a bandwidth around what center frequency; claim 20 is indefinite and incomplete. Although applicant has recited the structure of the mirror in lines 12-16 of claim 20, it is not clear how the components of the mirror connectively relate to the device as a whole, for example how or what does the ferroelectric electro-optical material do in the device that is different from any other mirror, clearly if this aspect of the device is of no import it should be excluded from the claim; however it is critical to novelty the connective relationship among element should be provided; claim 20 is indefinite and incomplete.

Claims 1-11 are rejected under the judicially created doctrine of double patenting over claims 1-10 and 17 of U. S. Patent No. 6,041,071 since claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is *fully disclosed in the patent* and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

Application 09/910,698	U.S. Patent Number 6,041,071
Claim 1. A tunable external cavity waveguide adapted for tuning a semiconductor laser, said tunable external cavity waveguide comprising: a ferroelectric electro-optical substrate; means for creating a waveguide in said substrate; and a distributed Bragg reflector (DBR) for selecting a laser oscillation wavelength.	Claim 1. A tunable external cavity waveguide device, said waveguide device comprising: ferroelectric electro-optical substrate; waveguide formed in said substrate; distributed Bragg reflector (DBR) disposed adjacent a portion of said waveguide; and means for applying a voltage difference across said distributed Bragg reflector,
Claim 2. A tunable external cavity waveguide according to claim 1 wherein said substrate has an electro-optic coefficient of no more than $r_{33} = 240$ pm/V and a strain-optic coefficient which is positive.	Claim 2. A tunable external cavity waveguide device according to claim 1 wherein said substrate has an electro-optic coefficient of no less than $r_{33} = 240$ pm/V and a strain-optic coefficient which is positive
Claim 3. A tunable external cavity waveguide according to claim 2 wherein said substrate has a strain-	Claim 3. A tunable external cavity waveguide device according to claim 2 wherein said substrate has a strain-

optic coefficient in the range of about 0.1.	optic coefficient in the range of about 0.1.
Claim 4. A tunable external cavity waveguide according to claim 3 wherein said substrate comprises SBN.	Claim 4. . A tunable external cavity waveguide device according to claim 3 wherein said substrate comprises: $\text{Sr}_x \text{Ba}_{(1-y)} \text{Nb}_2 \text{O}_6$.
Claim 5. A tunable external cavity waveguide according to claim 4 wherein said substrate comprises SBN:61.	Claim 5. A tunable external cavity waveguide device according to claim 4 wherein said substrate comprises: $\text{Sr}_{0.61} \text{Ba}_{0.39} \text{Nb}_2 \text{O}_6$
Claim 6. A tunable external cavity waveguide according to claim 4 wherein said substrate comprises SBN:75.	Claim 6. A tunable external cavity waveguide device according to claim 4 wherein said substrate comprises: $\text{Sr}_{0.75} \text{Ba}_{0.25} \text{Nb}_2 \text{O}_6$
Claim 7. A tunable external cavity waveguide according to claim 3 wherein said substrate comprises PLZT.	Claim 7. . A tunable external cavity waveguide device according to claim 3 wherein said substrate comprises: $\text{Pb}_{(1-x)} \text{La}_x (\text{Ti}_{(1-y)} \text{Zr}_y)_{1-(x/4)} \text{O}_3$.
Claim 8. A tunable external cavity waveguide according to claim 3 wherein said substrate comprises LiNbO_3 .	Claim 8. A tunable external cavity waveguide device according to claim 3 wherein said substrate comprises: LiNbO_3 .
Claim 9. A tunable external cavity waveguide according to claim 3 wherein said substrate comprises LiTaO_3 .	Claim 9. A tunable external cavity waveguide device according to claim 3 wherein said substrate comprises: LiTaO_3 .
Claim 10. A tunable external cavity waveguide according to claim 3 wherein said substrate comprises BaTiO_3 .	Claim 10. A tunable external cavity waveguide device according to claim 3 wherein said substrate comprises: BaTiO_3 .
Claim 11. A tunable external cavity waveguide according to claim 1 wherein said waveguide is created in said substrate by inducing a compressive strain field within said substrate, wherein said compressive strain field creates a graduated variation in the index of refraction of said substrate.	Claim 17. A tunable external cavity waveguide device according to claim 1 wherein said substrate has an index of refraction wherein said waveguide is formed in said substrate by inducing a strain field within said substrate, and wherein said strain field forms graduated variations in the index of refraction of said substrate in such a way that the affected area has a different index of refraction than the remainder of said substrate, thereby

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	forming an optical waveguide.
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When one views the claims of the application in light of the claims of the patent, it is clear that the patent encompasses all the features of the application.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon Scott, Jr. whose telephone number is 703-308-4884. The examiner can normally be reached on Monday - Friday, 6:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul P. Ip can be reached on (703)308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7721 for regular communications and 703-308-2864 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.



Leon Scott, Jr.
Primary Examiner

Leon Scott, Jr.
Primary Examiner
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lsjr
July 13, 2002